

What is Claimed is:

1. An image expanding apparatus, comprising:

coding parameter detecting means for detecting coding parameters from an image code;

5 expanding parameter designating means for designating expanding parameters;

extracting parameter calculating means for calculating an extracting parameter based on the coding parameters and the expanding parameters; and

10 code extracting means for extracting a code necessary for obtaining an expanded image designated by the expanding parameters from the image code with reference to the extracting parameter.

2. The image expanding apparatus as set forth in claim 1, further comprising:

15 image expanding means for obtaining an expanded image designated by the expanding parameters based on the extracted code.

3. The image expanding apparatus as set forth in claim 1,

wherein the code extracting means is configured to extract as the extracted code a code having a necessary resolution level of a necessary tile 20 of a necessary layout object.

4. The image expanding apparatus as set forth in claim 3,

wherein the coding parameters includeB vertical and horizontal sizes in pixels of a page image, the number of layout objects in a page, and the size of a tile,

wherein the expanding parameters include an expanded image size proportional to the resolution of the expanded image, the number of layout objects to be displayed, the number of a layout object to be displayed, and an image display area for each layout object, and

5 wherein the extracting parameter calculating means is configured to calculate as the expanding parameters a layout object necessary for expanding an image, a tile necessary for each layout object, and a resolution level necessary for expanding an image based on the coding parameters and the expanding parameters.

10 5. The image expanding apparatus as set forth in claim 1,
 wherein the image expanding apparatus deals with a compound document file format according to the JPEG 2000 system.

6. An image expanding method, comprising the steps of:
 detecting coding parameters from an image code;
15 designating expanding parameters;
 calculating an extracting parameter based on the coding parameters and the expanding parameters; and
 extracting a code necessary for obtaining an expanded image designated by the expanding parameters from the image code with reference to the extracting parameter.

20 7. The image expanding method as set forth in claim 6, further comprising the step of:
 obtaining an expanded image designated by the expanding parameters based on the extracted code.

8. The image expanding method as set forth in claim 6,
wherein the code extracting step is performed by extracting as the
extracted code a code having a necessary resolution level of a necessary tile
of a necessary layout object.

5 9. The image expanding method as set forth in claim 8,
wherein the coding parameters include vertical and horizontal sizes
in pixels of a page image, the number of layout objects in a page, and the
size of a tile,

10 wherein the expanding parameters include an expanded image size
proportional to the resolution of the expanded image, the number of layout
objects to be displayed, the number of a layout object to be displayed, and an
image display area for each layout object, and
wherein the extracting parameter calculating step is performed by
calculating as the expanding parameters a layout object necessary for
15 expanding an image, a tile necessary for each layout object, and a resolution
level necessary for expanding an image based on the coding parameters and
the expanding parameters.

10. The image expanding method as set forth in claim 6,
wherein the image expanding method deals with a compound
20 document file format according to the JPEG 2000 system.

11. A computer program product embodied on a computer-readable
medium and comprising codes which, when executed, cause a computer to
perform an image expanding method, comprising the steps of:
detecting coding parameters from an image code;

designating expanding parameters;

calculating an extracting parameter based on the coding parameters and the expanding parameters; and

extracting a code necessary for obtaining an expanded image

5 designated by the expanding parameters from the image code with reference to the extracting parameter.

12. The computer program product as set forth in claim 11,
wherein the image expanding method further comprising the step of:
obtaining an expanded image designated by the expanding
10 parameters based on the extracted code.

13. The computer program product as set forth in claim 11,
wherein the code extracting step is performed by extracting as the
extracted code a code having a necessary resolution level of a necessary tile
of a necessary layout object.

15 14. The computer program product as set forth in claim 13,
wherein the coding parameters include vertical and horizontal sizes
in pixels of a page image, the number of layout objects in a page, and the
size of a tile,
wherein the expanding parameters include an expanded image size
20 proportional to the resolution of the expanded image, the number of layout
objects to be displayed, the number of a layout object to be displayed, and an
image display area for each layout object, and
wherein the extracting parameter calculating step is performed by
calculating as the expanding parameters a layout object necessary for

expanding an image, a tile necessary for each layout object, and a resolution level necessary for expanding an image based on the coding parameters and the expanding parameters.

15. The computer program product as set forth in any claim 11,
5 wherein the image expanding method deals with a compound document file format according to the JPEG 2000 system.